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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,010	12/03/2004	Michael Joseph Coghlan	X-15110	1172
25885	7590	10/12/2007		
ELI LILLY & COMPANY PATENT DIVISION P.O. BOX 6288 INDIANAPOLIS, IN 46206-6288			EXAMINER LOEWE, SUN JAE Y	
			ART UNIT 1626	PAPER NUMBER
			NOTIFICATION DATE 10/12/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@lilly.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/517,010	<b>Applicant(s)</b> COGHLAN ET AL.	
	<b>Examiner</b> Sun Jae Y. Loewe	<b>Art Unit</b> 1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 9/7/2007.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 122-144 is/are pending in the application.
- 4a) Of the above claim(s) 134-137 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 122-133 and 138-144 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

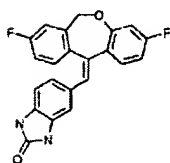
- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/11/2005</u> | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 122-144 are pending in the instant application. Claims 1-121 were cancelled by preliminary amendment filed on December 3, 2004.

### *Election/Restrictions*

2. Applicant's election without traverse of Group I and compound of structure



in the reply filed on September 7, 2007 is acknowledged.

3. Claims 134-137 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected subject matter. Election was made **without** traverse in the reply filed on September 7, 2007.
4. Claims 122-133 are not withdrawn because they are drawn to products of Formula I. Therefore, these claims were examined herein. The scope of the subject matter searched and examined for these claims was that of the elected Group I.

### *Information Disclosure Statement*

5. The information disclosure statement (IDS) submitted on October 11, 2005 was filed in compliance with the provisions of 37 CFR 1.97 and 37 CFR 1.98. The IDS was considered. A signed copy of form 1449 is enclosed herewith.

*Specification*

6. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

*Claim Objections*

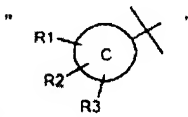
7. Claim 128 objected to for being dependent on a base rejected claim.
8. Claims 122-133 objected to for containing non-elected subject matter. It is noted that if the non-elected subject matter is cancelled, these claims will be duplicates of claims 138-144. It is suggested that claims 122-133 be cancelled.
9. Claim 122 objected to for containing the term "novel". It is suggested that this term be cancelled from the claim.

*Claim Rejections - 35 USC § 112*

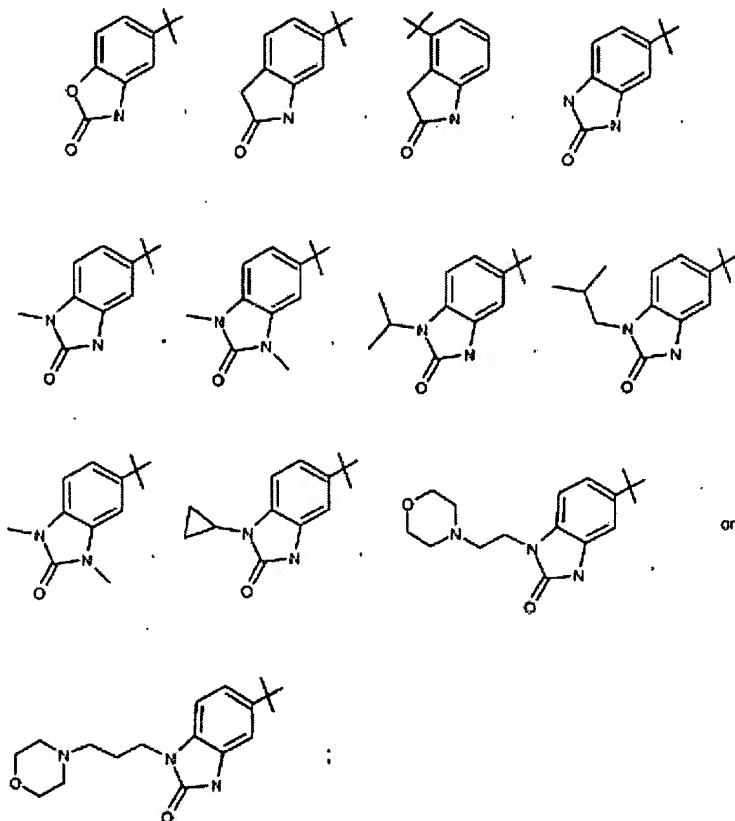
The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

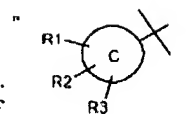
10. Claims 122-124 and 138-140 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The group  is defined as:

“a benzofused heterocycle having a non-hydrogen substituent at at least one of R1-R3,  
wherein said benzofused heterocycle having a non-hydrogen substituent is given by the following:



”



Within the broadest reasonable interpretation, the definition of “benzofused heterocycle” (ie. cyclic structures identified above) to be further substituted with at least one variables  $R^1$ ,  $R^2$  or  $R^3$ .

First, variables  $R^1$ - $R^3$  are not defined in the claims. Second, a few of the structures identified for “benzofused heterocycle” (eg. 3<sup>rd</sup> row, 1<sup>st</sup> column) cannot be further substituted because there are no open valences. Appropriate correction to the claims is required.

To be within the broadest reasonable interpretation, for the purpose of examination, the variables  $R^1$ - $R^3$  were taken to encompass any chemical group.

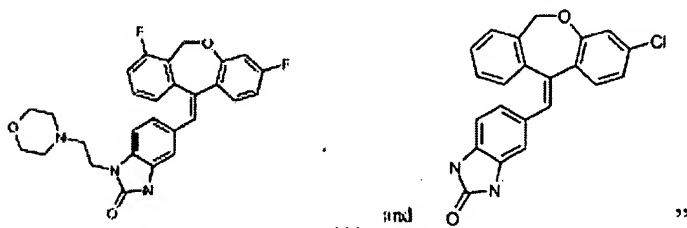
11. Claims 122 and 138 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim refers to the limitation "~~-----~~" which is absent from the Markush Formula I. Appropriate correction is required.

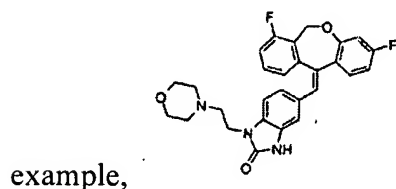
12. Claims 130, 131, 133, 141, 142 and 144 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are drawn to specific compounds as opposed to Markush structures that accommodate multiple alternatives. For example,

"130. (Withdrawn) The compound according to Claim 122 which is selected from the group consisting of



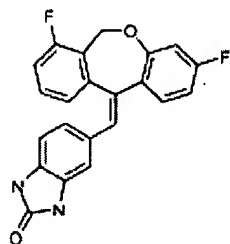
However, the structures as drawn do not imply specific compounds because of the presence of open valences. It is requested that the structures be modified to show complete valences, for

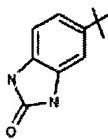


13. Claims 130, 131, 133, 141, 142 and 144 are drawn to specific compounds wherein the group "benzofused heterocycle" cannot be further substituted with "at least one of R<sup>1</sup>, R<sup>2</sup> or R<sup>3</sup>".

However, these claims depend from a claim that requires the group “benzofused heterocycle” to be substituted with at least one of  $R^1$ ,  $R^2$  or  $R^3$ . Therefore, the claims lack antecedent basis.

For example, claim 141 recites the compound:



For this compound, “benzofused heterocycle” =  is unsubstituted.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re*

*Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 122-127, 129, 132, 138, 139, 140 and 142-144 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14 of copending Application No. 10/576,761 (Gavardinas et al., US-2007/0037788). Although the conflicting claims are not identical, they are not patentably distinct from each other for the following reasons below.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

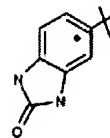
*Determination of the scope and contents of claims 1-14 of US Appl. 10/576,761.*

The claims are drawn to a Markush group of compounds, and pharmaceutical compositions thereof, that are disclosed to have the same activity as the instantly claimed compounds.

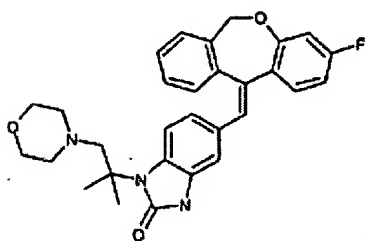
Preferred embodiments disclosed include the following compounds (examples 1-6, pages 24-25 of US-2007/0037788):



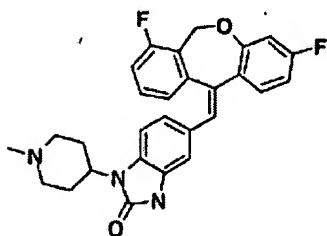
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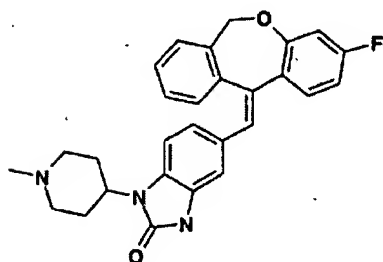
X-Y=-CH<sub>2</sub>-O-; A=B=phenyl; R<sup>4</sup>-R<sup>6</sup>=hydrogen or fluoro; R<sup>8</sup>=hydrogen; C=



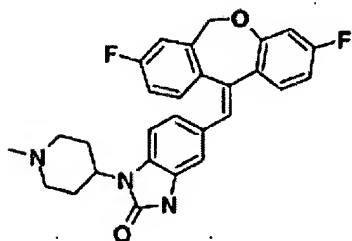
R<sup>3</sup>=alkyl-morpholine



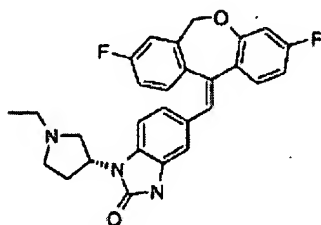
R<sup>3</sup>= methyl piperidine



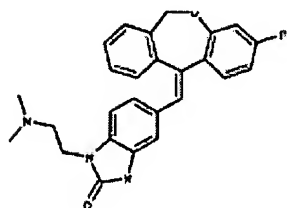
R<sup>3</sup>= methyl piperidine



R<sup>3</sup>= methyl piperidine



R<sup>3</sup>= ethyl pyrrolidine



R<sup>3</sup>= ethyl substituted with amine

Ascertaining the differences between claims 1-14 of US Appl. 10/576,761 and the claims at issue.

The compounds fit into the instant Markush claim.

Resolving the level of ordinary skill in the pertinent art – Prima Facie Case of Obviousness.

MPEP § 2144.08.II.A.4(c) states "...consider teachings of a preferred species within the genus. If such a species is structurally similar to that claimed, its disclosure may motivate one of ordinary skill in the art to choose the claimed species or subgenus from the genus, based on the reasonable expectation that structurally similar species usually have similar properties". This is a "Genus-Species Guidelines" for the examination based on 35 U.S.C. 103. An analogous guideline was followed here for the analysis of obviousness-type double patenting.

Thus, the instant claims are *prima facie* obvious over claims 1-14 of this copending application in view of the preferred embodiments.

15. Claim 128 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14 of copending Application No. 10/576,761 (Gavardinas et al., US-2007/0037788). Although the conflicting claims are not identical, they are not patentably distinct from each other for the following reasons below.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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*Determination of the scope and contents of prior art.*

The claims are drawn to a Markush group of compounds, and pharmaceutical compositions thereof, that are disclosed to have the same activity as the instantly claimed compounds.

Preferred embodiments disclosed include the compounds shown above in section 14.

*Ascertaining the differences between prior art and instant claims.*

The compounds above are homologs of compounds that fit into the instantly claimed genus. That is, the vinyl group is substituted with hydrogen (Application No. 10/576,761) vs. alkyl for the instant claims.

*Resolving the level of ordinary skill in the pertinent art – Prima Facie Case of Obviousness.*

To those skilled in chemical art, one homologue is not an advance over an adjacent member of a homologous series. The reason for this is that one of ordinary skill, knowing the properties of one member of series, would know what properties to expect in adjacent members. In re Henze, 85 USPQ 261 (1950). In re Wood, 199 U.S.P.Q. 137 (C.C.P.A. 1978) and In re Lohr, 137 U.S.P.Q. 548, 549 (C.C.P.A. 1963).

One of ordinary skill would be motivated, from the disclosure of Lien et al., to make the modification required to arrive at the instant invention with reasonable expectation of success for obtaining a compound with the same anti-apoptotic activity. The motivation to make the claimed compound would be to make additional anti-apoptotic compounds.

Thus, the instant claims are *prima facie* obvious over the teaching of the prior art.

***Allowable Subject Matter***

16. The elected subject matter is allowable over the art of record. The closest structures in the art are those referenced in section 2. However, the instant application has a priority date that is earlier than the reference cited in section 2.

***Conclusion***

17. No claims allowed.

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18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sun Jae Y. Loewe whose telephone number is (571) 272-9074.

The examiner can normally be reached on M-F 7:30-5:00 Est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph McKane can be reached on (571)272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sun Jae Y. Loewe  
Art Unit 1626



REBECCA ANDERSON  
PRIMARY EXAMINER